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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,737	10/30/2003	Min-Jung Kim	P-0609	6181

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EXAMINER	
LIM, STEVEN	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/695,737	KIM ET AL.	
	Examiner	Art Unit	
	Steven Lim	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/30/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3, 11, 12, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hiramatsu et al. (US 6600933).

3. Regarding Claim 1, Hiramatsu et al. teaches a packet transmission system having multiple antennas including transmitting data through a sequentially selected antenna (Col. 1, Lines 25-30, Fig. 1) and if error occurs in the transmitted data, retransmitting corresponding erroneous data (Col. 6, Lines 41-54).

4. Regarding Claim 2, Hiramatsu et al. further teaches the data transmission and retransmission steps comprise the step of checking whether a receiver correctly receives the data (Col. 6, Liens 41-54).

5. Regarding Claim 3, Hiramatsu et al. further teaches receiving a response signal from the receiver and checking whether the response signal is a retransmission request signal. (Col. 6, Lines 41-54).

6. Regarding Claim 11, Hiramatsu et al. further teaches the data transmission is downlink transmission (Col. 1, Lines 25-30).

7. Regarding Claim 12, Hiramatsu et al. further teaches the transmission is based on a mobile communication system (Col. 3, Lines 30-34).

8. Regarding Claim 15, Hiramatsu et al. further teaches an error control method of ARQ is applied to the packet transmission system (ARQ controls, Col. 11, Lines 38-40).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 4-10, 16-24, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (US 6600933) in view of Eastmond et al. (US 6088337).

12. Regarding Claim 4, Hiramatsu et al. discloses receiving a response signal from the receiver, however Hiramatsu et al. fails to disclose the response signal is an acknowledgement signal of a physical layer.

In an analogous art, Eastmond et al. discloses an acknowledgement signal of a physical layer being returned from a receiver (Fig. 20, Item 2008, Fig. 21, Item 2107, 2108, and 2122), which enables a standard ARQ system.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to return an acknowledgement signal in order to follow standard operations of an ARQ system which is disclosed as in use by Hiramatsu et al. and Eastmond et al.

13. Regarding Claim 5, Hiramatsu et al. further discloses a retransmission system, however Hiramatsu et al. fails to disclose selecting the specific antenna and retransmitting the corresponding erroneous data through the selected specific antenna.

In an analogous art, Eastmond et al. further discloses selecting the specific antenna and retransmitting the corresponding erroneous data through the selected specific antenna (Col. 2, Lines 37-40), which enables improvement in signal quality.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to select another antenna and transmit through it to improve signal quality (Col. 2, Lines 53-57).

14. Regarding Claim 6, Hiramatsu et al. further discloses a retransmission system, however Hiramatsu et al. fails to disclose sequentially selecting the antennas again, and transmitting the rest of the data through the selected antenna.

In an analogous art, Eastmond et al. discloses sequentially selecting the antennas again after the retransmission step, and transmitting the rest of the data through the selected antenna (Col. 2, Lines 40-41), which enables the system to process data in a cyclic fashion.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to select the antennas again and transmit data through the selected antenna in order to start the process over again.

15. Regarding Claim 7, Hiramatsu et al. further discloses a retransmission system, however Hiramatsu et al. fails to disclose the specific antenna is one of the antenna except the antenna having performed initial transmission of erroneous data.

In an analogous art, Eastmond et al. discloses the specific antenna is one of the antennas except the antenna having performed initial transmission of erroneous data (Col. 2, Lines 37-40), which enables improvement in signal quality.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to use an antenna other than the initial antenna to improve signal quality (Col. 2, Lines 53-57).

16. Regarding Claim 8, Hiramatsu et al. further discloses a retransmission system, however Hiramatsu et al. fails to disclose selecting the specific antenna, retransmitting the corresponding erroneous data through the selected specific antenna, and sequentially selecting the antennas again, and transmitting the rest of the data through the selected antenna.

In an analogous art, Eastmond et al. further discloses selecting the specific antenna, retransmitting the corresponding erroneous data through the selected specific antenna (Col. 2, Lines 37-40), sequentially selecting the antennas again after the retransmission step, and transmitting the rest of the data through the selected antenna (Col. 2, Lines 40-41), which enables the system to process data in a cyclic fashion.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to select another antenna and transmit through it to improve signal quality (Col. 2, Lines 53-57), and to select the antennas again and transmit data through the selected antenna in order to start the process over again.

17. Regarding Claim 9, Hiramatsu et al. discloses using two antennas with the device and retransmitting when an error is received, however Hiramatsu et al. fails to disclose the specific antenna is one of the antenna causing no transmission error.

In an analogous art, Eastmond et al. discloses the specific antenna is one of the antennas causing no transmission error (other antenna has not been used and therefore has no error, Col. 2, Liens 37-40), which enables improvement in signal quality.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to use an antenna that causes no error in order to improve signal quality (Col. 2, Lines 53-57).

18. Regarding Claim 10, Hiramatsu et al. discloses transmitting and retransmitting data, however Hiramatsu et al. fails to disclose the rest of the data is transmitted until another data transmission error occurs.

In an analogous art, Eastmond et al. discloses the rest of the data is transmitted until another error occurs (antenna is retained when no error is received, Col. 2, Lines 40-41), which enables the system to save resources from unnecessarily changing antennas.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to transmit the data on the same antenna until an error occurs because the antenna is functioning without problems.

19. Regarding Claim 16, Hiramatsu et al. discloses checking a response signal for a retransmission request signal. (Col. 6, Lines 41-54), however Hiramatsu et al. fails to disclose retransmitting the corresponding erroneous data through the selected specific antenna.

In an analogous art, Eastmond et al. further retransmitting the corresponding erroneous data through the selected specific antenna (Col. 2, Lines 37-40), which enables improvement in signal quality.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to transmit data through a specific antenna to improve signal quality (Col. 2, Lines 53-57).

20. Regarding Claim 17, Hiramatsu et al. further discloses a packet transmission system having multiple antennas including transmitting data through a sequentially selected antenna (Col. 1, Lines 25-30, Fig. 1) and receiving a response signal from the receiver (Col. 6, Lines 41-54).

21. Regarding Claim 18, Hiramatsu et al. further discloses a retransmission system, however Hiramatsu et al. fails to disclose selecting the specific antenna and retransmitting the corresponding erroneous data through the selected specific antenna.

In an analogous art, Eastmond et al. further discloses selecting the specific antenna and retransmitting the corresponding erroneous data through the selected specific antenna (Col. 2, Lines 37-40), which enables improvement in signal quality.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to select another antenna and transmit through it to improve signal quality (Col. 2, Lines 53-57).

22. Regarding Claim 19, Hiramatsu et al. further discloses a retransmission system, however Hiramatsu et al. fails to disclose sequentially selecting the antennas again, and transmitting the rest of the data through the selected antenna.

In an analogous art, Eastmond et al. discloses sequentially selecting the antennas again after the retransmission step, and transmitting the rest of the data

through the selected antenna (Col. 2, Lines 40-41), which enables the system to process data in a cyclic fashion.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to select the antennas again and transmit data through the selected antenna in order to start the process over again.

23. Regarding Claim 20, Hiramatsu et al. further discloses a retransmission system, however Hiramatsu et al. fails to disclose the specific antenna is one of the antenna except the antenna having performed initial transmission of erroneous data.

In an analogous art, Eastmond et al. discloses the specific antenna is one of the antennas except the antenna having performed initial transmission of erroneous data (Col. 2, Lines 37-40), which enables improvement in signal quality.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to use an antenna other than the initial antenna to improve signal quality (Col. 2, Lines 53-57).

24. Regarding Claim 21, Hiramatsu et al. further discloses a retransmission system, however Hiramatsu et al. fails to disclose selecting the specific antenna, retransmitting the corresponding erroneous data through the selected specific antenna, and sequentially selecting the antennas again, and transmitting the rest of the data through the selected antenna.

In an analogous art, Eastmond et al. further discloses selecting the specific antenna, retransmitting the corresponding erroneous data through the selected specific antenna (Col. 2, Lines 37-40), sequentially selecting the antennas again after the

retransmission step, and transmitting the rest of the data through the selected antenna (Col. 2, Lines 40-41), which enables the system to process data in a cyclic fashion.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to select another antenna and transmit through it to improve signal quality (Col. 2, Lines 53-57), and to select the antennas again and transmit data through the selected antenna in order to start the process over again.

25. Regarding Claim 22, Hiramatsu et al. discloses using two antennas with the device and retransmitting when an error is received, however Hiramatsu et al. fails to disclose the specific antenna is one of the antenna causing no transmission error.

In an analogous art, Eastmond et al. discloses the specific antenna is one of the antennas causing no transmission error (other antenna has not been used and therefore has no error, Col. 2, Liens 37-40), which enables improvement in signal quality.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to use an antenna that causes no error in order to improve signal quality (Col. 2, Lines 53-57).

26. Regarding Claim 23, Hiramatsu et al. discloses transmitting and retransmitting data, however Hiramatsu et al. fails to disclose the rest of the data is transmitted until another data transmission error occurs and a retransmission request signal is received.

In an analogous art, Eastmond et al. discloses the rest of the data is transmitted until another error occurs and a retransmission request signal is received (antenna is

retained when no error is received, Col. 2, Lines 40-41), which enables the system to save resources from unnecessarily changing antennas.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to transmit the data on the same antenna until an error occurs because the antenna is functioning without problems.

27. Regarding Claim 24, Hiramatsu et al. further discloses the data transmission is downlink transmission (Col. 1, Lines 25-30).

28. Regarding Claim 27, Hiramatsu et al. further discloses an error control method of ARQ is applied to the packet transmission system (ARQ controls, Col. 11, Lines 38-40).

29. Regarding Claim 28, Hiramatsu et al. further discloses receiving a response signal from the receiver, however Hiramatsu et al. fails to disclose the response signal is an acknowledgement signal of a physical layer.

In an analogous art, Eastmond et al. discloses an acknowledgement signal of a physical layer being returned from a receiver (Fig. 20, Item 2008, Fig. 21, Item 2107, 2108, and 2122), which enables a standard ARQ system.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to return an acknowledgement signal in order to follow standard operations of an ARQ system which is disclosed as in use by Hiramatsu et al. and Eastmond et al.

30. Regarding Claim 29, Hiramatsu et al. further discloses the transmission is based on a mobile communication system (Col. 3, Lines 30-34).

31. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (US 6600933) in view of Texas Instruments (May 1999, Open Loop Downlink Transmit Diversity for TDD, TSG-RAN WG1 meeting #5).

32. Regarding Claim 13, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose performing the transmission according to open loop transmit diversity.

In an analogous art, TI discloses using open loop transmit diversity in a WCDMA system (Page 1), which enables the system to follow standards in place formed by 3GPP.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system in order to follow standards in place formed by 3GPP.

33. Regarding Claim 14, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose performing the transmission according to TSTD.

In an analogous art, TI discloses using open loop transmit diversity in a WCDMA system with TSTD (Page 1), which enables the system to follow standards in place formed by 3GPP.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system with TSTD in order to follow standards in place formed by 3GPP.

34. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (US 6600933) in view of Texas Instruments (May 1999, Open Loop Downlink Transmit Diversity for TDD, TSG-RAN WG1 meeting #5) and further in view of Eastmond et al. (US 6088337).

35. Regarding Claim 25, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose performing the transmission according to open loop transmit diversity.

In an analogous art, TI discloses using open loop transmit diversity in a WCDMA system (Page 1), which enables the system to follow standards in place formed by 3GPP.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system in order to follow standards in place formed by 3GPP.

36. Regarding Claim 26, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose performing the transmission according to TSTD.

In an analogous art, TI discloses using open loop transmit diversity in a WCDMA system with TSTD (Page 1), which enables the system to follow standards in place formed by 3GPP.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system with TSTD in order to follow standards in place formed by 3GPP.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Lim whose telephone number is (571) 270-1210. The examiner can normally be reached on Mon-Thurs 9:00am-4:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571)272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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